<center>REMARKS</center>

This application has been carefully reviewed in light of the Office Action dated July 6, 2007. Reconsideration and favorable action in this case are respectfully requested.

The Examiner has rejected the Abstract as too short. Applicant has amended the Abstact as not descriptive of the claimed apparatus. Applicant has amended the title accordingly.

The Examiner has rejected claims 1and 6 under 35 U.S.C. §102(e) as being unpatentable over U.S. Pat. No. 6397240 to Fernando. Applicant has reviewed this reference in detail and does not believe that it discloses or makes obvious the invention as claimed.

The Examiner has rejected claims 2-5 and 7-10 under 35 U.S.C. §103 as being unpatentable over Fernando in view of U.S. Pub. No. 20020122507 to Eidson. Applicant has reviewed these references in detail and does not believe that they disclose or make obvious the invention as claimed.

Applicant disagrees with the final status of the previous Office Action. The Examiner states that Applicant's amendment necessitated the new grounds of rejection. However, the Applicant's argument was that (1) the cited references did not show circuitry for generating a sequence of probable symbols using Reduced State Sequence Estimation, which was explicit in the original claim and that (2) the cited references did not show a butterfly structure of $sm_1' = \min\{ sm_1 + n, sm_2 - n \}$ and $sm_2' = \min\{ sm_1 - n, sm_2 + n \}$, as required by the original claim. The changes to independent claims 1 and 6 were made in conjunction with the Examiners rejection under 35 U.S.C. 101, which has been withdrawn by the Examiner. ***Therefore, no rejection made in the current Office Action was necessitated by an amendment made by Applicant and the finality should be withdrawn.***

The Fernando reference suffers from the same problem as the previous references cited by the Examiner. It does not show any means for generating a sequence of probable symbols from a sequence of received symbols using Reduced State Sequence Estimation. There is no mention of RSSE, reduced states, nor are there any equations that would indicate that the device is using butterfly circuitry to implement RSSE. It certainly does not provide any teaching on how the RSSE method could be implemented using a butterfly circuit.

Further, Fernando does not teach any circuitry for computing multiple path metrics between a first state and a second state ***responsive to the received symbols and reference constellation symbols*** and calculating a best path metric at the second state using the output said butterfly circuitry.

35 U.S.C. § 102 requires complete anticipation of a claim. The Examiner has not shown a reference which teaches generating a sequence of probable symbols from a sequence of received symbols using Reduced State Sequence Estimation using butterfly circuitry.

Further, Applicant does not believe that the Fernando reference shows anything that could be remotely considered relevant to the use of a butterfly circuit to implement RSSE. It simply shows the use of a particular accelerator to implement a butterfly calculation, which it states could be used for Viterbi calculations.

Similarly, Eidson provides no teaching to rotate received symbols in connection with either RSSE or a butterfly circuit. The disclosure of Eidson would provide no information to one skilled in the art to rotate received or reference symbols in order to use a butterfly circuit for RSSE.

Accordingly, Applicant respectfully requests allowance of claims 1-10.

An extension of two months is requested and a Request for Extension of Time under § 1.136 with the appropriate fee is attached hereto.

The Commissioner is hereby authorized to charge any fees or credit any overpayment, including extension fees, to Deposit Account No. 20-0668 of Texas Instruments Incorporated.

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Applicant has made a diligent effort to place the claims in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Alan W. Lintel, Applicant's Attorney at (972) 664-9595 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

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